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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/537,091

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EXAMINER

EVANS, FANNIE L

ART UNIT

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2877

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/537,091	Applicant(s) KANDA, MASAHIKO	
	Examiner F. L. Evans	Art Unit 2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on January 18, 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8-10 is/are allowed.
- 6) ☒ Claim(s) 1-3, 7, 11-14 and 16-19 is/are rejected.
- 7) ☒ Claim(s) 4-6, 15 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>06022005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The Preliminary Amendment

Receipt is acknowledged of the preliminary amendment filed on June 2, 2005. The amendment has been placed of record in the file.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. § 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

All of the prior art cited in the information disclosure statement filed on June 2, 2005 has been considered except the Japanese patent documents. Copies of the Japanese patent documents are not present in the file of the application. See MPEP § 1893.03(g).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. § 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 17 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The lack of an antecedent for "the laminar-flow generating chamber" in line 3 of claim 17 and "the sheath fluid" in lines 5 and 6 of claim 17 renders the claim and any claim dependent therefrom indefinite. It appears that claim 17 should depend from claim 16 rather than claim 1. Correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 14 are rejected under 35 U.S.C. § 102(b) as being clearly anticipated by Böhmer (US 4,702,598).

Böhmer discloses a system for collecting biological information on a dyed biological particle by irradiating light onto liquid containing the dyed biological particles and detecting information light therefrom, the system comprising: a path-defining structure (2) of transparent material defining a flow path through which the liquid containing the dyed biological particles runs; an irradiation apparatus (the source of light beam 6) for irradiating light onto the particles (4) passing through the flow path; a first detecting apparatus (any one of the photomultipliers mentioned in lines 1 and 34 of column 3) for detecting first information light obtained from the irradiated particle; and a second detecting apparatus (any one of the photomultipliers mentioned in lines 1 and 34 of column 3) for detecting second information light obtained from the irradiated particle; wherein at least one of said first and second detecting apparatuses includes one or more fiber optics (20) of which one ends (Fig. 2) are arranged adjacent the flow path (sentence bridging columns 1 and 2) so as to collect the information light. The spectrometer of Böhmer comprises the discrimination filters discussed in lines 27-31 of column 4. Applicant's attention is directed to Böhmer in its entirety.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 2, 3, 7, 11 and 12 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Böhmer (US 4,702,598).

Böhmer shows essentially every claimed feature except the path-defining structure with a rectangular cross section. In lines 44 and 45 of column 3, Böhmer discloses that conventional path-defining structures (flow chamber) have rectangular cross-sections.

At the time the invention was made, it would have been obvious to one with ordinary skill in the art to mount optical fibers at appropriate locations directly adjacent to zones of a conventional path-defining structure (rectangular cross-section flow chamber) where light from biological particles was emitted. It would have been desirable to make such an arrangement in order to obtain the advantages set forth in lines 36-46 of column 4 of Böhmer.

Claim 13 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Böhmer (US 4,702,598) in view of Hideyuki et al (JP 01-12961).

Böhmer shows essentially every claimed feature except the collimating lens for collimating light that has been transmitted through the fiber optics.

Hideyuki et al disclose a flow cytometer comprising at least one detecting apparatus that includes fiber optics (10) of which one end is arranged adjacent the flow path (Fig. 1) and a collimating lens (12) for collimating light that has been transmitted through the fiber optics.

At the time the invention was made, it would have been obvious to position a collimating lens between the exit end of the fiber optics and the filters/detectors of Böhmer to provide collimated light onto the filters/detectors so that normal light would be incident on the photosensitive surfaces of the detectors. The more orthogonally that the beam arrives at the photosensitive surface of the detectors, the more efficient the detectors would have operated. The filters of Böhmer would have also operated more efficiently with normal light.

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Claims 16, 18 and 19 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Böhmer (US 4,702,598) in view of Van den Engh (US 6,133,044).

Böhmer shows essentially every claimed feature except a mechanism for adjusting a position of the suspension-fluid outlet of the suspension fluid tube and means for imparting oscillation on the liquid in the fluid flow.

Van den Engh discloses a flow cytometer comprising a mechanism for adjusting a position of the suspension-fluid outlet of the suspension fluid tube (36 - Fig. 3) and means for imparting oscillation on the liquid in the fluid flow (10).

At the time the invention was made, it would have been obvious to one with ordinary skill in the art to provide the flow cytometer of Böhmer with a mechanism for adjusting a position of the suspension-fluid outlet of the suspension fluid tube and means for imparting oscillation on the liquid in the fluid flow to obtain the advantages set forth in lines 34-56 of column 3 of Van den Engh.

Additional Prior Art

Shapiro et al (WO 85/05680) disclose the use of optical fibers (16) to collect light in a flow cytometer.

Winslow et al (US 5,489,977) disclose a system for monitoring a falling stream of water comprising a plurality of optical fibers used in measuring scattered light and fluorescent emission.

Allowable Subject Matter

Claims 8-10 are allowed over the prior art of record.

Claims 4-6, 15 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 17 would be allowable if rewritten or amended to overcome the rejection under 35 U.S.C. § 112, 2nd paragraph, set forth in this Office action.

As to dependent claim 4, the prior art of record, taken alone or in combination, fails to disclose or render obvious a system for collecting biological information on a dyed biological particle by irradiating light onto liquid containing the dyed biological particles and detecting information light therefrom, wherein the path-defining structure includes a partition plate between one ends of the fiber optics and one of the walls opposing to one ends of the fiber optics and wherein one ends of the fiber optics opposes to the partition plate, in combination with the rest of the limitations the claim.

As to independent claim 8, the prior art of record, taken alone or in combination, fails to disclose or render obvious a system for collecting biological information on a dyed biological particle by irradiating light onto liquid containing the dyed biological particles and detecting information light therefrom, wherein the irradiation apparatus includes first optical elements for collecting light at a first position and second optical elements for collecting light at a second position, the first and second positions being spaced from each other by a predetermined distance along a central axis of the flow path, in combination with the rest of the limitations of the claim.

As to dependent claim 15, the prior art of record, taken alone or in combination, fails to disclose or render obvious a system for collecting biological information on a dyed biological particle by irradiating light onto liquid containing the dyed biological particles and detecting information light therefrom comprising the claimed signal processing apparatus, in combination with the rest of the limitations of the claim.

As to dependent claim 20, the prior art of record, taken alone or in combination, fails to disclose or render obvious a system for collecting biological information on a dyed biological particle by irradiating light onto liquid containing the dyed biological particles and detecting information light therefrom, wherein at least one of the deflecting plates is formed from a porous plate, and an aspirator is provided at rear end of the porous deflecting plate for aspirating droplet attached on the porous deflecting plate, in combination with the rest of the limitations of the claim.

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Fax/Telephone Numbers

Any inquiry concerning this communication or earlier communications from the examiner should be directed to the examiner whose telephone number is (571) 272-2414.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr. can be reached on (571) 272-2800 ext 77. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

**/F. L. Evans/
Primary Examiner
Art Unit 2877**

February 22, 2008